

L6 12 S ARNA
L7 103 S ANTISENSE (W) RNA
L8 55 S ANTI (W) SENSE (W) RNA
L9 114 S L6 OR L7
L10 146 S L6 OR L7 OR L8
L11 114 S L1 AND L10
L12 6 S L4 AND L11
L13 1167 S U6
L14 276 S U(W)6
L15 0 S 7SK
L16 21 S 7(W)SK
L17 0 S H1RNA
L18 1 S H1 (W) RNA
L19 2481 S U3
L20 689 S U(W)3
L21 139 S MRP
L22 1454 S L13 OR L14 OR L15 OR L16
L23 2482 S L17 OR L18 OR L19
L24 827 S L20 OR L21
L25 3701 S L22 OR L23 OR L24
L26 298 S L1 AND L25
L27 2 S L10 AND L26

=> d his

(FILE 'USPAT' ENTERED AT 14:43:14 ON 10 JAN 95)
SET PAG SCR

L1 138186 S PROMOT?
SET HIG ON
L2 2 S POL(W)III
L3 40 S POLYMERASE(W)III
L4 40 S L2 OR L3
L5 33 S L1 AND L4
L6 12 S ARNA
L7 103 S ANTISENSE (W) RNA
L8 55 S ANTI (W) SENSE (W) RNA
L9 114 S L6 OR L7
L10 146 S L6 OR L7 OR L8
L11 114 S L1 AND L10
L12 6 S L4 AND L11
L13 1167 S U6
L14 276 S U(W)6
L15 0 S 7SK
L16 21 S 7(W)SK
L17 0 S H1RNA
L18 1 S H1 (W) RNA
L19 2481 S U3
L20 689 S U(W)3
L21 139 S MRP
L22 1454 S L13 OR L14 OR L15 OR L16
L23 2482 S L17 OR L18 OR L19
L24 827 S L20 OR L21
L25 3701 S L22 OR L23 OR L24
L26 298 S L1 AND L25
L27 2 S L10 AND L26
SET PAG 24
L28 1 S L12 AND L27
L29 7 S L12 OR L27
SET PAG SCR

=> 'Displayed L12 1-6 kwic w/o pr.
'DISPLAYED' IS NOT A RECOGNIZED COMMAND

=> 'Displayed L27 1-2 kwic w/o pr.
'DISPLAYED' IS NOT A RECOGNIZED COMMAND

FILE 'JPOABS' ENTERED AT 15:05:38 ON 10 JAN 95

SET HIG ON

L30 1 S POL(W)III
L31 2 S POLYMERASE(W)III
L32 2 S L30 OR L31
L33 0 S ARNA
L34 9 S ANTISENSE
L35 8 S ANTI(W)SENSE
L36 16 S L33 OR L34 OR L35
L37 0 S L32 AND L36
L38 19 S U6
L39 5 S U(W)6
L40 0 S 7SK
L41 0 S 7(W)SK
L42 0 S H1RNA
L43 0 S H1(W)RNA
L44 123 S U3
L45 18 S U(W)3
L46 27 S MRP
L47 185 S L38 OR L39 OR L44 OR L45 OR L46
L48 21278 S PROMOT?
L49 3 S L47 AND L48
L50 0 S L32 AND L49

=> lgo y

'LGO' IS NOT A RECOGNIZED COMMAND

=> log y

U.S. Patent & Trademark Office LOGOFF AT 15:11:39 ON 10 JAN 95

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RETR/1894/11674

08/32/00

(FILE 'HOME' ENTERED AT 15:23:51 ON 10 JAN 95)

FILE 'CA' ENTERED AT 15:23:59 ON 10 JAN 95

L1 129 S (POL(W)III)/BI,AB
L2 1496 S (POLYMERASE(W)III)/BI,AB
L3 1529 S L1 OR L2
L4 19 S ARNA/BI,AB
L5 87 S (ANTI(W)SENSE(W)RNA)/BI,AB
L6 1067 S (ANTISENSE(W)RNA)/BI,AB
L7 1126 S L4 OR L5 OR L6
L8 9 S L3 AND L7

=> d 18 1-9 bib ab

L8 ANSWER 1 OF 9 CA COPYRIGHT 1995 ACS

AN 121:271382 CA

TI Reduction in replication of the human immunodeficiency virus type 1 in human T cell lines by ***polymerase*** ***III*** -driven transcription of chimeric tRNA- ***antisense*** ***RNA*** genes

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1/1/95

x

AU Junker, Uwe; Rittner, Karola; Homann, Matthias; Bevec, Dorian; Bohnlein, Ernst; Szakiel, Georg

CS Wien, Austria

SO Antisense Res. Dev. (1994), 4(3), 165-72

CODEN: AREDEI; ISSN: 1050-5261

DT Journal

LA English

AB Inhibition of human immunodeficiency virus type 1 (HIV-1) replication was demonstrated by using tat- and rev-directed antisense oligoribonucleotides 68 and 69 nucleotides in length. In this study, human T-lymphoid cells were transduced with a murine amphotropic retroviral vector contg. a ***polymerase*** ***III*** -driven chimeric gene consisting of the human tRNA_{met} sequence and the short tat- and rev-directed antisense sequences that had been shown before to inhibit HIV-1 replication. Pools of transduced, G418-resistant human T-lymphoid Jurkat or CEM cells showed reduced replication of HIV-1 in the presence of antisense-contg. chimeric transcripts, but not with sense sequence-contg. transcripts. These results demonstrate that short inhibitory ***antisense*** ***RNA*** transcripts can be stably expressed endogenously using ***polymerase*** ***III*** promoters, which can reduce replication of HIV-1. The approach described in this work combines the advantages of short and, usually, synthetic oligonucleotides with the stable intracellular expression of inhibitory genes for HIV-1 in target cells. Considering the small size of the described chimeric ***polymerase*** ***III*** genes, it appears feasible to combine multiple antiviral genes with the currently available retroviral vectors as gene delivery systems.

L8 ANSWER 2 OF 9 CA COPYRIGHT 1995 ACS

AN 120:2271 CA

TI Vectors containing a modified viral gene transcribed by RNA ***polymerase*** ***III***, production of ***antisense*** ***RNA*** or ribozyme with the vector, and control of pathogens with said vector or RNA

IN Doglio, Alain; Lefebvre, Jean Claude; Cagnon, Laurence

PA University de Nice, Fr.

SO Fr. Demande, 29 pp.

CODEN: FRANBL

PI FR 2687411 A1 930820

AI FR 92-1608 920213

DT Patent

LA French

AB DNA vectors encoding anti-pathogen ***antisense*** ***RNA*** or ribozyme are described. The DNA sequence encoding the anti-pathogen RNA is inserted between or adjacent to boxes A and B of a viral gene promoter. The vector can be used in treatment of microbial or viral infections. Vectors contg. DNA encoding ***antisense*** ***RNA*** to HIV tat or rev nucleic acids inserted between boxes A and B of the adenovirus VIA gene were prep'd. HIV-1 replication was inhibited in CEM or MOLT-4 cells transfected with these vectors.

L8 ANSWER 3 OF 9 CA COPYRIGHT 1995 ACS

AN 117:84331 CA

TI Suppression of gene expression in plant cells utilizing antisense sequences transcribed by RNA ***polymerase*** ***III***

AU Bourque, June E.; Folk, William R.

CS Dep. Biochem., Univ. Missouri, Columbia, MO, 65211, USA

SO Plant Mol. Biol. (1992), 19(4), 641-7

#2

CODEN: PMBIDB; ISSN: 0167-4412

DT Journal

LA English

AB Inverted sequences of the chloramphenicol acetyltransferase (CAT) reporter gene were fused to a soybean tRNAmeti gene lacking a terminator such that the tRNAmeti sequences caused the co-transcription of CAT antisense sequences by RNA ***polymerase*** ***III***. When electroporated into carrot protoplasts, these antisense DNA constructs suppressed CAT enzyme activity expressed from co-electroporated DNAs contg. the CAT gene downstream of the cauliflower mosaic virus (CaMV) 35S RNA promoter. The most effective construct, an antisense sequence complementary to the 3' portion of the CAT gene, inhibited CAT activity five-fold greater than an antisense construct expressed by RNA polymerase II from the cauliflower mosaic virus 35S RNA promoter. These results indicate that antisense sequences transcribed by RNA ***polymerase*** ***III*** should efficiently suppress gene expression in plants.

L8 ANSWER 4 OF 9 CA COPYRIGHT 1995 ACS

AN 117:2159 CA

TI Inhibition of adenovirus replication by the E1A antisense transcript initiated from hsp70 and VA-1 promoters

AU Miroshnichenko, O. J.; Borisenko, A. S.; Ponomareva, T. I.; Tikhonenko, T. I.

CS Inst. Agric. Biotechnol., Moscow, 127253, Russia

SO Biomed. Sci. (London) (1990), 1(3), 267-73

#3

CODEN: BSCHE4; ISSN: 0955-9701

DT Journal

LA English

AB The E1A region of the adenoviral genome, important for initiation of virus infection and activation of other viral genes, was chosen as a target for engineering ***antisense*** ***RNA*** (asRNA) to inhibit adenovirus 5 (Ad5) replication in COS-1 cell culture in vitro. The hsp70 promoter, taken from the appropriate heat-shock-protein gene of *Drosophila melanogaster*, and the VA-1 RNA promoter, derived from the Ad5 gene coding for low-mol.-mass VA-1 RNA and recognized by RNA ***polymerase*** ***III***, were used as regulatory elements of transcription. The two types of recombinant constructs contained E1A fragments of 710 bp (hsp70 constructs) or 380 or 740 bp (VA-1 RNA constructs) in reverse orientation relative to the promoter position, as well as a transcription termination signal, the SV40 ori, and the gene controlling Geneticin (antibiotic G418) resistance (G418R). After

selection of stable cell lines in the presence of 200, a no. of stable G418R cell lines were raised which expressed engineered asRNAs. Plating of Ad5 suspensions of known titer on monolayers of transfected COS-1 cells clearly showed strong inhibition of adenovirus replication by asRNAs: 75% with the hps70 promoter and 90% with the VA-1 RNA promoter.

L8 ANSWER 5 OF 9 CA COPYRIGHT 1995 ACS
AN 114:242082 CA
TI Genetic construct for inhibiting RNA function
IN Beug, Hartmut; Birnstiel, Max L.; Cotten, Matthew; Wagner, Ernst;
Kandolf, Harald
PA Boehringer Ingelheim International G.m.b.H., Fed. Rep. Ger. #4
SO Eur. Pat. Appl., 36 pp.
CODEN: EPXXDW
PI EP 387775 A1 900919
DS R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE
AI EP 90-104701 900313
PRAI AT 89-609 890316
DT Patent
LA German
AB A genetic construct for inhibiting RNA function comprises a ***polymerase*** ***III*** transcription unit contg. DNA which encodes an RNA-inhibiting RNA. A plasmid contg. the gene for methionine initiator tRNA of Xenopus was constructed. Into the ApaI site between the A and B boxes of the regulatory region, DNA encoding a ribozyme flanked by RNA complementary to U7 snRNA or erbB mRNA was inserted. This plasmid was introduced into chicken erythroblasts complexed to a polylysine-transferrin conjugate. In the transformants, the target RNA was cleaved. The efficiency of cleavage was not affected by incorporation of the ribozyme into the tRNA structure, and the ribozyme was stabilized by its inclusion in the tRNA mol. Similar activity and stability were obtained when the ribozyme encoding sequence was incorporated into the intron of a tRNA gene.

L8 ANSWER 6 OF 9 CA COPYRIGHT 1995 ACS
AN 114:222638 CA
TI The rodent B2 sequence can affect expression when present in the transcribed region of a reporter gene
AU Bladon, Trevor S.; McBurney, Michael W.
CS Dep. Med., Univ. Ottawa, Ottawa, ON, K1H 8M5, Can.
SO Gene (1991), 98(2), 259-63
CODEN: GENED6; ISSN: 0378-1119
DT Journal
LA English
AB The mouse B2 element is a moderately repetitive nt sequence of 180 bp transcribed by RNA ***polymerase*** ***III*** (***Pol*** ***III***) at high levels in embryonic and transformed cells. The B2 sequence is present in either orientation within the noncoding regions of a no. of genes transcribed by RNA polymerase II (Pol II). To det. if the small B2 transcripts generated by ***Pol*** ***III*** are natural ***antisense*** ***RNA*** mols. which might hybridize to complementary sequences present within Pol II transcripts, chimaeric reporter genes encoding Escherichia coli gpt were constructed contg. a B2 repeat in either orientation within the 5'- or 3'-untranslated regions. These constructs were transfected into embryonal carcinoma (EC) cells and expression of the reporter gene was analyzed in EC cells and retinoic acid-treated EC cells, which contain high and low levels of small B2 RNAs, resp. Although the B2 sequences affected expression of the reporter gene, these effects did not appear to be due to hybridization of the small B2 RNA to the reporter transcripts. The presence of B2 sequences near a Pol II-transcribed gene can alter expression of that gene in a position- and orientation-dependent manner, suggesting these repetitive elements

may be cis-acting regulators of gene expression.

L8 ANSWER 7 OF 9 CA COPYRIGHT 1995 ACS
AN 114:75955 CA
TI Expression of chimeric tRNA-driven antisense transcripts renders NIH 3T3 cells highly resistant to Moloney murine leukemia virus replication
AU Sullenger, Bruce A.; Lee, Thomas C.; Smith, Clayton A.; Ungers, Grace E.; Gilboa, Eli #5
CS Bone Marrow Transplant Serv., Mem. Sloan-Kettering Cancer Cent., New York, NY, 10021, USA
SO Mol. Cell. Biol. (1990), 10(12), 6512-23
CODEN: MCEBD4; ISSN: 0270-7306

DT Journal
LA English
AB NIH 3T3 cells infected with Moloney murine leukemia virus (MoMLV) express high levels of virus-specific RNA. To inhibit replication of the virus, chimeric tRNA genes encoding antisense templates were stably introduced into NIH 3T3 cells via a retroviral vector. Efficient expression of hybrid tRNA-MoMLV antisense transcripts and inhibition of MoMLV replication were dependent on the use of a particular type of retroviral vector, the double-copy vector, in which the chimeric tRNA gene was inserted in the 3' long terminal repeat. MoMLV replication was inhibited up to 97% in cells expressing ***antisense*** ***RNA*** corresponding to the gag gene and less than 2-fold in cells expressing ***antisense*** ***RNA*** corresponding to the pol gene. RNA and protein analyses suggest that inhibition was exerted at the level of translation. These results suggest that RNA ***polymerase*** ***III***-based antisense inhibition systems can be used to inhibit highly expressed viral genes and render cells resistant to viral replication via intracellular immunization strategies.

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L8 ANSWER 8 OF 9 CA COPYRIGHT 1995 ACS
AN 113:92458 CA
TI Silkmoth chorion ***antisense*** ***RNA*** . Structural characterization, developmental regulation and evolutionary conservation
AU Skeiky, Yasir A. W.; Iatrou, Kostas
CS Fac. Med., Univ. Calgary, Calgary, AB, T2N 4N1, Can.
SO J. Mol. Biol. (1990), 213(1), 53-66
CODEN: JMOBAK; ISSN: 0022-2836
DT Journal
LA English
AB Choriogenic follicular cells of the silkworm *Bombyx mori* contain significant quantities of ***antisense*** ***RNA*** transcribed from chorion genes. ***Antisense*** ***RNA*** derived from a chorion gene with a high content of cysteine, HcB.12, was characterized in detail. The antisense transcripts are initiated downstream from the 3' end of HcB.12 mRNA and extend over 75% of the length of the gene, comprising its entire second exon and part of its intervening sequence. The ***antisense*** ***RNA*** is devoid of any significant open reading frames and is not polyadenylated. These features, combined with the presence of specific sequence motifs within its transcribed and upstream region, suggest that ***antisense*** ***RNA*** may be transcribed by RNA ***polymerase*** ***III*** . Chorion ***antisense*** ***RNA*** is detectable only in choriogenic follicular cells and appears to be coordinately regulated with chorion mRNA. Its cytoplasmic accumulation during choriogenesis parallels that of the corresponding mRNA. Although chorion mRNA is at least 5 times more abundant than ***antisense*** ***RNA***, the latter is present as a single-stranded entity in follicular cytoplasm but can form perfect duplexes with its mRNA complement upon annealing in vitro. The possible involvement of ***antisense*** ***RNA*** transcription in the pathway that controls the programmed expression

L8 ANSWER 9 OF 9 CA COPYRIGHT 1995 ACS
 AN 107:212659 CA
 TI Inhibition of SV40 replicon function by engineered ***antisense***
 RNA transcribed by RNA ***polymerase*** ***III***
 AU Jennings, P. A.; Molloy, P. L.
 CS Div. Mol. Biol., CSIRO, North Ryde, 2113, Australia
 SO EMBO J. (1987), 6(10), 3043-7
 CODEN: EMJODG; ISSN: 0261-4189
 DT Journal
 LA English
 AB Promoters recognized by RNA ***polymerase*** ***III*** were used to direct synthesis of RNAs of opposite polarity to the 5' end of the mRNA for the large T-antigen of SV40. A construct was made utilizing the adenovirus (human type II) VA1 gene promoter linked to 163 bp of SV40 DNA sequences cloned in antisense orientation relative to the promoter. The SV40 sequence corresponds to the 5' end of the large T-antigen gene. In addn. to the antisense constructs, control plasmids were utilized which either lacked both promoter and SV40 elements, lacked RNA ***polymerase*** ***III*** promoter elements but contained SV40 sequences, or contained the VA1 gene promoter fused to SV40 sequences in the sense orientation. The function of the various gene fusions was demonstrated in an in vitro transcription system and in vivo by S1 nuclease 5' end mapping following transfection into COS1 cells. Cotransfection of COS1 cells with the antisense gene and a plasmid contg. an SV40 origin of replication resulted in a substantial transient inhibition of SV40-replicon function when compared to control detns. (50% to nearly complete inhibition of large T-antigen dependent DNA replication for 18-36 h). These results show that an ***antisense*** ***RNA*** generated by RNA ***polymerase*** ***III*** can effectively block expression of a chromosomally located gene.

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(FILE 'HOME' ENTERED AT 15:23:51 ON 10 JAN 95)

FILE 'CA' ENTERED AT 15:23:59 ON 10 JAN 95

L1 129 S (POL(W)III)/BI,AB
 L2 1496 S (POLYMERASE(W)III)/BI,AB
 L3 1529 S L1 OR L2
 L4 19 S ARNA/BI,AB
 L5 87 S (ANTI(W)SENSE(W)RNA)/BI,AB
 L6 1067 S (ANTISENSE(W)RNA)/BI,AB
 L7 1126 S L4 OR L5 OR L6
 L8 9 S L3 AND L7
 L9 1014 S U6/BI,AB
 L10 384 S (U(W)6)/BI,AB
 L11 35 S 7SK/BI,AB
 L12 6 S (7(W)SK)/BI,AB
 L13 0 S H1RNA/BI,AB
 L14 20 S (H1(W)RNA)/BI,AB
 L15 1181 S U3/BI,AB
 L16 661 S (U(W)3)/BI,AB
 L17 320 S MRP
 L18 320 S MRP/BI,AB
 L19 1373 S L9 OR L10 OR L11 OR L12 OR L13
 L20 2126 S L14 OR L15 OR L16 OR L17 OR L18
 L21 3432 S L19 OR L20
 L22 146539 S PROMOT?/BI,AB
 L23 243 S L21 AND L22
 L24 1 S L7 AND L23

L24 ANSWER 1 OF 1 CA COPYRIGHT 1995 ACS
AN 121:292778 CA
TI Expression constructs containing HIV inhibiting antisense sequences
and their delivery by traditional means or using retrovirus
expression vectors
IN Pyati, Jagdeesh
PA Ortho Pharmaceutical Corp., USA
SO Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
PI EP 612844 A2 940831
DS R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT,
SE
AI EP 94-301315 940224
PRAI US 93-21936 930225
US 94-190350 940201
DT Patent
LA English
AB Antisense nucleotides that inhibit replication of human
immunodeficiency virus are described for use in the treatment and
prophylaxis of AIDS. The constructs are administered to the patient
by traditional pharm. methods, or through the use of recombinant
retrovirus delivery systems. The retrovirus delivery systems may be
target-specific. Such targeting is accomplished by modifying the
envelope of the retrovirus to contain sequences for which a receptor
or ligand exists on the target. The construction of a no. of
antisense expression vectors is demonstrated. Two of these vectors
were packaged using an amphotropic cell line and the virus used to
infect a T-lymphoblastoid cell line. The cells were shown to
transcribe the antisense message and were 75-80% resistant to
challenge with HIV-1.

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	ENTRY	SESSION

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